

WHAT IS CLAIMED IS:

1. A therapeutic composition comprising one or more antiproliferative protein as comprised in a high molecular weight fraction of an embryonal extract
5 prepared by the steps of:
- a) solubilizing a mammalian embryonal tissue;
 - b) centrifuging the solubilized embryonal tissue to form a supernatant;
 - c) applying the supernatant to a gel filtration column;
 - d) eluting the gel filtration column;
 - 10 e) collecting the eluate as serial fractions; and
 - f) identifying one or more fraction that contains a protein having a molecular weight greater than 10 kDa and which inhibits the proliferation of a cancer cell;
- whereby the identified fraction or fractions contains one or more
15 antiproliferative protein.
2. The therapeutic composition of claim 1 where the protein is as comprised in an extract as purified by steps a) through f) and further purified by DEAE chromatography, where the protein is not substantially retained by DEAE
20 resin.
3. The therapeutic composition of claim 1, where the protein has a molecular weight of between 30 and 80 kDa.
- 25 4. The therapeutic composition of claim 1 where the protein has a molecular weight of approximately 80-90 kDa.
5. The therapeutic composition of claim 1 where the protein has a molecular weight of approximately 50-60 kDa.
- 30 6. The therapeutic composition of claim 1 where the protein has a molecular weight of approximately 40-42 kDa.

7. The therapeutic composition of claim 1 where the protein has a molecular weight of approximately 30 kDa.

5 8. The therapeutic composition of claim 1 where the protein has a molecular weight of approximately 20.1 kDa.

9. A method of inhibiting the proliferation of cancer cells in a subject comprising administering, to the subject, an effective amount of the therapeutic composition of claim 1.

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10. The method of claim 9, where the cancer cells are breast cancer cells.

11. The method of claim 9, where the cancer cells are lung cancer cells.

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12. The method of claim 9, where the cancer cells are colon cells.

13. The method of claim 9, where the cancer cells are melanoma cells.

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14. The method of claim 9, where the cancer cells are leukemia cells.

15. A method of inhibiting the effects of viral infection in a subject comprising administering, to the subject, an effective amount of the therapeutic composition of claim 1.

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16. The method of claim 15, where the virus is human immunodeficiency virus type 1.

17. The method of claim 15, where the virus is a Bunyavirus.

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18. The method of claim 15, where the virus is a Togavirus.

19. The method of claim 15, where the virus is a Reovirus.

20. The method of claim 15, where the virus is a Herpevirus.

5 21. The method of claim 15, where the virus is a Poxvirus.

22. An antiproliferative peptide selected from the group consisting of
Cys Val His Ala Tyr Arg Ser (SEQ ID NO:1);
Cys Val His Ala Tyr Arg Ala (SEQ ID NO:2);
10 Cys Val His Ala Phe Arg Ser (SEQ ID NO:3);
Cys Val His Ala Phe Arg Ala (SEQ ID NO:4);
Cys Val His Ser Tyr Arg Ser (SEQ ID NO:5);
Cys Val His Ser Tyr Arg Ala (SEQ ID NO:6);
Cys Val His Ser Phe Arg Ser (SEQ ID NO:7);
15 Cys Val His Ser Phe Arg Ala (SEQ ID NO:8);
Cys Val His Thr Tyr Arg Ser (SEQ ID NO:9);
Cys Val His Thr Tyr Arg Ala (SEQ ID NO:10);
Cys Val His Thr Phe Arg Ser (SEQ ID NO:11); and
Cys Val His Thr Phe Arg Ala (SEQ ID NO:12).

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23. A method of inhibiting proliferation of cancer cells in a subject comprising administering, to the subject, an effective amount of a peptide according to claim 22.

25 24. A method of inhibiting proliferation of cancer cells in a subject comprising administering, to the subject, an effective amount of a peptide selected from the group consisting of:

Cys Val His Ala Tyr Arg Ala (SEQ ID NO:2);
Cys Val His Ala Phe Arg Ser (SEQ ID NO:3); and
30 Cys Val His Ser Phe Arg Ala (SEQ ID NO:8).